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EXAMINER

POON, KING Y

ART UNIT

PAPER NUMBER

2624

DATE MAILED: 06/04/2003

21

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/174,551	WATANABE, MASAKI	
	Examiner	Art Unit	
	King Y. Poon	2624	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 1/30/2003 and 3/24/2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 7,9,11-15 and 21-29 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 7,9,11-15 and 21-29 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
 If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: _____ |

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DETAILED ACTION

Request for Continued Examination

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 1/30/2003, and 3/24/2003 has been entered.

The new title has been entered.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 21-23, 26-28 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Regarding claims 21-23: Limitations of "sequentially available . . . print data expanders" is subject matter which was not described in the specification in such a way as to reasonably

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convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Regarding claims 26-28: Claims 26-28, are rejected under 35 U.S.C. 112, first paragraph because they depend on rejected claims 21-23.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 7, 9, 11-15, 21-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nagasaka (U.S. Patent # 5,511,156) in view of Kumano et al (US 5,706,210).

Regarding claim 7: Nagasaka teaches a network system (fig. 2) composed of a print server computer (6a, fig. 2, having server process 211, column 5, lines 40-50) and a plurality of client computers, (6a, 6b, 6c, fig. 2, having a client process, column 5, lines 40-50) wherein the print server computer and the plurality of client computers each has a print data expander (rasterizer 212, column 7, lines 5-15) for expanding print data to bit-map band data, (small portions, column 6, lines 60-65) in parallel, (column 6, lines 25-30) wherein each of the plurality of client computers comprises: a page divider (216 of column 6, lines 59-67, column 22, lines 40-45) for

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dividing generated print data for each page into a plurality of bands, (graphic area, column 24 table 3, fig. 27, small portions, column 6, lines 60-65) wherein the generated print data is generated by an application; (column 6, lines 1-15) and a transfer controller (210, column 6, lines 65-67, column 7, lines 1-5) for transferring a sequentially selected (see the group are arranged in a sequence of 1, 2, 3, . . . , N to be selected by client process 210, column 23, lines 45-67, column 24, line 1-25, and table 3) one of the bands to available (usable, column 7 line 51, fig. 6, fig. 7) ones of print data expanders of the print server computer (column 6, lines 25-30) and the plurality client computers, (212 of other computers, column 7, lines 1-10), the transfer being performed without grouping the bands (see respective small portions of divided code are sent to respective processor, column 6, lines 60-67, column 7, lines 1-5, i.e., each small portion being sent to a processor is a band, some of the band being sent to a particular processor and some of the band being sent to another processor. Therefore the bands will not be grouped prior to transfer because they are going in different directions) prior to transfer wherein expanded bit-map band data by the print data expander of each client computer is transferred to the print server computer, (column 7, lines 5-27), the available ones of the print data expanders of the print server computer and the plurality of client computers determined by checking a print data expanding process status (processor load, column 8, lines 25-30) received from each of the print server computer and the plurality of client computers, (fig. 8, column 8, lines 25-32, column 9, lines 14-20, column 6, lines 23-29) and the print server computer comprises: a combiner (220 of column 7, lines 24-27) for combining bit-map band data expanded by the print data expander of the print server computer

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and the expanded bit-map band data received from at least one of the client computers to produce combined bit-map band data corresponding to the generated print data.

Nagasaka does not teach the print data expanding process status is received without first sending a message to request participation/status to the print server computer and the plurality of client computers.

Kumano, in the same area of reporting status information from one device to another, teaches a monitoring device receives status (status report, column 3, lines 64-68, column 4, lines 7-19) from another device without sending a message to request status from the another device.

Therefore, it would have been obvious to a person with ordinary skill in the art at the time the invention was made to have modified Nagasaka's method of receiving print data expanding process status from each of the print server computer and the plurality of client computers to include: receiving print data expanding process status from each of the print server computer and the plurality of client computers without first sending a message to request participation/status to the print server computer and the plurality of client computers.

It would have been obvious to a person with ordinary skill in the art at the time the invention was made to have modified Nagasaka's method of receiving print data expanding process status from each of the print server computer and the plurality of client computers by the teaching of Kumano because of the following reasons: (a) it would have reduced communication traffic by eliminating the requesting process, as taught by Kumano, at column 19, lines 5-10, and (b) sending status to print job requesting computer to indicate the processors in the print server

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computer and the plurality of client computers are ready to expand print data, would speed up print data expanding process because the status requesting message may not be generated at the time the processors are ready to expand print data.

Regarding claims 9: Nagasaka teaches wherein, when receiving a band (partial files, abstract) from another print data expander, (see rasterizer/expander generates a print request, (abstract) which distribute the PDL translation processing to all computers, column 6, line 25-29) each of the plurality of print data expanders expands the received band to bit-map band data, (column 7, lines 1-25) sets a print data expanding process status of a print data expander of its own to unavailable (error code, column 8, lines 63-64, fig. 7) while expanding the received band, and resets the print data expanding process status to available when the expanding process of the received band has been completed, (normal end code, column 8, line 63, fig. 7) wherein the print data expanding process status is used to determine whether a corresponding print data expander is available. (29, fig. 7)

Regarding claim 11: Nagasaka teaches wherein the page divider divides the generated print data for each page into the bands which are numbered from top of a page in sequence. (Fig. 27, graphic form group, table 3 of column 24 teaches to number the groups in the sequence of 1, 2, ..., N)

Regarding claim 12: Nagasaka teaches wherein the combiner (220 of column 7, lines 24-27) receives the bit-map band data expanded by the print data expander of the print server computer (6a, column 6, line 19) and the expanded bit-map band data received from the at least

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one of the client (6b, 6c, column 6 lines 20-30) computers, (column 7, lines 15-27, column 6, lines 25-30) determines whether the bit-map band data are received in original sequence of the bands, (see 220 arrange and the received print element groups according to table 3, column 24 line 10-25, and check conversion status of column 25 line 5-20) rearranges (column 25, lines 1-5) the bit-map band data in the original sequence when a sequence of the bit-map band data is not identical to the original sequence, (one group is converted before the other, column 25 line 5-20) and reproduces (synthesize, column 7, line 25) the combined bit-map band data corresponding to the generated print data.

Regarding claim 13: Nagasaka teaches a print data control method for a network system (fig. 2) composed of a print server computer (6a, fig. 2, having server process 211, column 5, lines 40-50) and a plurality of client computers, (6a, 6b, 6c, fig. 2, having a client process, column 5, lines 40-50) comprising the steps of at each of the plurality of client computers, (a) dividing (216 of column 6, lines 59-67, column 22, lines 40-45) generated print data into a plurality of sequential bands, (see the groups/bands are arranged in a sequence of 1, 2, 3, . . . , N to be selected by client process 210, column 23, lines 45-67, column 24, line 1-25, and table 3); (b) distributing sequential (see the group are arranged in a sequence of 1, 2, 3, . . . , N to be selected by client process 210, column 23, lines 45-67, column 24, line 1-25, and table 3) bands, without grouping the bands prior to transmission (see respective small portions of divided code are sent to respective processor, column 6, lines 60-67, column 7, lines 1-5, i.e., each small portion being sent to a processor is a band, some of the band being sent to a particular processor and some of

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the band being sent to another processor. Therefore the bands will not be grouped prior to transfer because they are going in different directions) sequentially (1-N, table 3, column 24) over the print server computer and at least one of the client computers, (column 6, lines 24-29), to expand (rasterized into picture elements/bitmap, column 7, lines 20-27) the sequential bands to bitmap band data in parallel (column 6, lines 28) among the print server computer and the at least one client computer; the distributing step including selecting one of the bands to available (usable, column 7 line 51, fig. 6, fig. 7) one of the print server computer and the client computer by checking print data expanding process statuses (processor load, column 8, lines 25-30) received from the print server computer and the client computer, (fig. 8, column 8, lines 25-32, column 9, lines 14-20, column 6, lines 23-29); and at print server computer, (c) combining (220 of column 7, lines 24-27) bit-map band data expanded by the print server computer and the client computer to produce combined bit-map band data corresponding to the print data.

Nagasaka does not teach the print data expanding process status is received without first sending a message to request participation/status to the print server computer and the client computer.

Kumano, in the same area of reporting status information from one device to another, teaches a monitoring device receives status (status report, column 3, lines 64-68, column 4, lines 7-19) from another device without sending a message to request status from the another device.

Therefore, it would have been obvious to a person with ordinary skill in the art at the time the invention was made to have modified Nagasaka's method of receiving print data expanding

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process status from the print server computer and the client computers to include: receiving print data expanding process status from the print server computer and the client computer without first sending a message to request participation/status to the print server computer and the client computer.

It would have been obvious to a person with ordinary skill in the art at the time the invention was made to have modified Nagasaka's method of receiving print data expanding process status from the print server computer and the client computer by the teaching of Kumano because of the following reasons: (a) it would have reduced communication traffic by eliminating the requesting process, as taught by Kumano, at column 19, lines 5-10, and (b) sending status to print job requesting computer to indicate the processors in the print server computer and the plurality of client computers are ready to expand print data, would speed up print data expanding process because the status requesting message may not be generated at the time the processors are ready to expand print data.

Regarding claim 14: Nagasaka teaches at the client computer, selecting one from the sequential bands in sequence; (see the respective portion of the divided code, (group) are selected to be transmitted to a respective interpreter of a computer, column 6 line 65-67, column 7 line 1-3); transferring a selected band to a selected computer; (column 7, lines 42-59; the respective portion of the divided code, (group) are selected to be transmitted to a respective interpreter of a computer, column 6 line 65-67, column 7 line 1-3) expanding a client-received band to bit-map band data; (column 7, lines 5-15) and setting a print data expanding client process status to

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unavailable (error code, column 8, lines 63-64, fig. 7) while expanding the client-received band and resetting the print data expanding client process status to available (normal end code, column 8, line 63, fig. 7) when a print data expanding process of the client-received band has been completed, and at the print server computer, expanding a server-received band to bit-map band data; (column 7, lines 5-15) and setting a print data expanding server process status to unavailable (error code, column 8, lines 63, fig. 7) while expanding the client-received band and resetting the print data expanding server process status to available (normal end code, column 8, line 63, fig. 7) when a print data expanding process of the client-received band has been completed.

Regarding claim 15: Nagasaka teaches wherein the combiner (220 of column 7, lines 24-27) receives the bit-map band data expanded by the print data expander of the print server computer (6a, column 6, line 19) and the expanded bit-map band data received from the at least one of the client (6b, 6c, column 6 lines 20-30) computers, (column 7, lines 15-27, column 6, lines 25-30) determines whether the bit-map band data are received in original sequence of the bands, (see 220 arrange and the received print element groups according to table 3, column 24 line 10-25, and check conversion status of column 25 line 5-20) rearranges (column 25, lines 1-5) the bit-map band data in the original sequence when a sequence of the bit-map band data is not identical to the original sequence, (one group is converted before the other, column 25 line 5-20) and reproduces (synthesizes, column 7, line 25) the bit-map data corresponding to the generated print data.

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Regarding claim 21: Nagasaka teaches a network system (fig. 2) comprising a print server computer (6a, fig. 2, having server process 211, column 5, lines 40-50) and a plurality of client computers, (6a, 6b, 6c, fig. 2, having a client process, column 5, lines 40-50) wherein each of the plurality of client computers comprises: a first print data expander (rasterizer 212, of the client computers, column 7, lines 5-15) for expanding print data to bit-map band data; (small portions, column 6, line 60-65) a page divider (216 of column 6, lines 59-67, column 22, lines 40-45) for dividing generated print data for each page into a plurality of bands, (e.g., graphic area, column 24, table 3, fig. 27, small portions, column 6, lines 60-65) wherein the generated print data is generated by an application; (column 6, lines 1-15) and a transfer controller (210, column 6, lines 65-67, column 7, lines 1-5) for transferring a sequentially selected (see the group are arranged in a sequence of 1, 2, 3, . . . , N to be selected by client process 210, column 23, lines 45-67, column 24, line 1-25, and table 3) one of the bands to a sequentially (fig. 6) available (usable, column 7 line 51, fig. 6, fig. 7) ones of print data expanders of the print server computer (column 6, lines 25-30) and client computers, (212 of other computers, column 7, lines 1-10), the transfer being performed without grouping the bands (see respective small portions of divided code are sent to respective processor, column 6, lines 60-67, column 7, lines 1-5, i.e., each small portion being sent to a processor is a band, some of the band being sent to a particular processor and some of the band being sent to another processor. Therefore the bands will not be grouped prior to transfer because they are going in different directions) prior to transfer, wherein expanded bit-map band data by the print data expander of each client computer is transferred to the print server

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computer, (column 7, lines 5-27), the available ones of the print data expanders of the print server computer and the plurality of client computers determined by checking a print data expanding process status (processor load, column 8, lines 25-30) received from each of the print server computer and the plurality of client computers, (fig. 8, column 8, lines 25-32, column 9, lines 14-20, column 6, lines 23-29) and the print server computer comprises: a second print data expander (rasterizer 212, of the computer 6a, column 7, lines 5-15) for expanding print data received from at least one of the client computers to bit-map band data in parallel with the first print data expander; (column 6, lines 25-30) a combiner (220 of column 7, lines 24-27) for combining bit-map band data expanded by the print data expander of the print server computer and the expanded bit-map band data received from at least one of the client computers to produce combined bit-map band data corresponding to the generated print data.

Nagasaka does not teach the print data expanding process status is received without first sending a message to request participation/status to the print server computer and the plurality of client computers.

Kumano, in the same area of reporting status information from one device to another, teaches a monitoring device receives status (status report, column 3, lines 64-68, column 4, lines 7-19) from another device without sending a message to request status from the another device.

Therefore, it would have been obvious to a person with ordinary skill in the art at the time the invention was made to have modified Nagasaka's method of receiving print data expanding process status from each of the print server computer and the plurality of client computers to

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include: receiving print data expanding process status from each of the print server computer and the plurality of client computers without first sending a message to request participation/status to the print server computer and the plurality of client computers.

It would have been obvious to a person with ordinary skill in the art at the time the invention was made to have modified Nagasaka's method of receiving print data expanding process status from each of the print server computer and the plurality of client computers by the teaching of Kumano because of the following reasons: (a) it would have reduced communication traffic by eliminating the requesting process, as taught by Kumano, at column 19, lines 5-10, and (b) sending status to print job requesting computer to indicate the processors in the print server computer and the plurality of client computers are ready to expand print data, would speed up print data expanding process because the status requesting message may not be generated at the time the processors are ready to expand print data.

Regarding claim 22: Nagasaka teaches a client computer (6a, fig. 2, having a client process, column 5, lines 40-50) in a network system (fig. 2) comprising a print server computer (6a, fig. 2, having server process 211, column 5, lines 40-50, for sending print data to a printer, column 7, lines 25-35) and a plurality of client computers, (6a, 6b, 6c, fig. 2) the client computer comprising: a print data expander (rasterizer 212, column 7, lines 5-15) for expanding print data to bit-map band data; (small portions of print data, column 6, lines 60-65) a page divider (216 of column 6, lines 59-67, column 22, lines 40-45) for dividing generated print data for each page into a plurality of bands, (graphic area, column 24 table 3, fig. 27) wherein the generated print data is

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generated by an application; (column 6, lines 1-15) and a transfer controller (210, column 6, lines 65-67, column 7, lines 1-5) for transferring a sequentially selected (see the group are arranged in a sequence of 1, 2, 3, . . . , N to be selected by client process 210, column 23, lines 45-67, column 24, line 1-25, and table 3) one of the bands to a sequentially (fig. 6) available (usable, column 7 line 51, fig. 6, fig. 7) one of print data expanders of the print server computer (column 6, lines 25-30) and other client computers, (212 of other computers, column 7, lines 1-10) the transfer being performed without grouping the bands (see respective small portions of divided code are sent to respective processor, column 6, lines 60-67, column 7, lines 1-5, i.e., each small portion being sent to a processor is a band, some of the band being sent to a particular processor and some of the band being sent to another processor. Therefore the bands will not be grouped prior to transfer because they are going in different directions) prior to transfer, wherein expanded bit-map band data by the print data expander of each client computer is transferred to the print server computer, (column 7, lines 5-27), the available ones of the print data expanders of the print server computer and the plurality of client computers determined by checking a print data expanding process status (processor load, column 8, lines 25-30) received from each of the print server computer and the plurality of client computers, (fig. 8, column 8, lines 25-32, column 9, lines 14-20, column 6, lines 23-29); and wherein the print server computer combines (column 7, lines 24-27) bit-map band data expanded by the printer server computer and the expanded bit-map band data received from at least one of the client computers to produce combined bit-map band data corresponding to the generated print date.

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Nagasaka does not teach the print data expanding process status is received without first sending a message to request participation/status to the print server computer and the plurality of client computers.

Kumano, in the same area of reporting status information from one device to another, teaches a monitoring device receives status (status report, column 3, lines 64-68, column 4, lines 7-19) from another device without sending a message to request status from the another device.

Therefore, it would have been obvious to a person with ordinary skill in the art at the time the invention was made to have modified Nagasaka's method of receiving print data expanding process status from each of the print server computer and the plurality of client computers to include: receiving print data expanding process status from each of the print server computer and the plurality of client computers without first sending a message to request participation/status to the print server computer and the plurality of client computers.

It would have been obvious to a person with ordinary skill in the art at the time the invention was made to have modified Nagasaka's method of receiving print data expanding process status from each of the print server computer and the plurality of client computers by the teaching of Kumano because of the following reasons: (a) it would have reduced communication traffic by eliminating the requesting process, as taught by Kumano, at column 19, lines 5-10, and (b) sending status to print job requesting computer to indicate the processors in the print server computer and the plurality of client computers are ready to expand print data, would speed up

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print data expanding process because the status requesting message may not be generated at the time the processors are ready to expand print data.

Regarding claim 23: Nagasaka teaches a network system (fig. 2) comprising a server program (server process 211, column 7, line 4, rasterizer 212, of the computer 6a, column 7, lines 5-15, a combiner 220 of column 7, lines 24-27) for instructing a print server computer (6a, fig. 2, having server process 211, column 5, lines 40-50) and a plurality of client computers, (6a, 6b, 6c, fig. 2, having a client process, column 5, lines 40-50) wherein each of the plurality of client computers comprises: a first print data expander (rasterizer 212, of the client computers, column 7, lines 5-15) for expanding print data to bit-map band data; (small portions, column 6, line 60-65) a page divider (216 of column 6, lines 59-67, column 22, lines 40-45) for dividing generated print data for each page into a plurality of bands, (e.g., graphic area, column 24, table 3, fig. 27, small portions, column 6, lines 60-65) wherein the generated print data is generated by an application; (column 6, lines 1-15) and a transfer controller (210, column 6, lines 65-67, column 7, lines 1-5) for transferring a sequentially selected (see the group are arranged in a sequence of 1, 2, 3, . . . , N to be selected by client process 210, column 23, lines 45-67, column 24, line 1-25, and table 3) one of the bands to a sequentially (fig. 6) available (usable, column 7 line 51, fig. 6, fig. 7) ones of print data expanders of the print server computer (column 6, lines 25-30) and client computers, (212 of other computers, column 7, lines 1-10), the transfer being performed without grouping the bands (see respective small portions of divided code are sent to respective processor, column 6, lines 60-67, column 7, lines 1-5, i.e., each small portion being sent to a

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processor is a band, some of the band being sent to a particular processor and some of the band being sent to another processor. Therefore the bands will not be grouped prior to transfer because they are going in different directions) prior to transfer, wherein expanded bit-map band data by the print data expander of each client computer is transferred to the print server computer, (column 7, lines 5-27), the available ones of the print data expanders of the print server computer and the plurality of client computers determined by checking a print data expanding process status (processor load, column 8, lines 25-30) received from each of the print server computer and the plurality of client computers, (fig. 8, column 8, lines 25-32, column 9, lines 14-20, column 6, lines 23-29) and the print server program comprising the step of: expanding print data (rasterizer 212, of the computer 6a, column 7, lines 5-15) received from at least one of the client computers to bit-map band data in parallel with the first print data expander; (column 6, lines 25-30) combining bit-map band data (220 of column 7, lines 24-27) expanded by the print data expander of the print server computer and the expanded bit-map band data received from at least one of the client computers to produce combined bit-map band data corresponding to the generated print data.

Nagasaka does not teach the print data expanding process status is received without first sending a message to request participation/status to the print server computer and the plurality of client computers.

Kumano, in the same area of reporting status information from one device to another, teaches a monitoring device receives status (status report, column 3, lines 64-68, column 4, lines 7-19) from another device without sending a message to request status from the another device.

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Therefore, it would have been obvious to a person with ordinary skill in the art at the time the invention was made to have modified Nagasaka's method of receiving print data expanding process status from each of the print server computer and the plurality of client computers to include: receiving print data expanding process status from each of the print server computer and the plurality of client computers without first sending a message to request participation/status to the print server computer and the plurality of client computers.

It would have been obvious to a person with ordinary skill in the art at the time the invention was made to have modified Nagasaka's method of receiving print data expanding process status from each of the print server computer and the plurality of client computers by the teaching of Kumano because of the following reasons: (a) it would have reduced communication traffic by eliminating the requesting process, as taught by Kumano, at column 19, lines 5-10, and (b) sending status to print job requesting computer to indicate the processors in the print server computer and the plurality of client computers are ready to expand print data, would speed up print data expanding process because the status requesting message may not be generated at the time the processors are ready to expand print data.

Regarding claim 24: Nagasaka teaches a network system (fig. 2) comprising a print server computer (6a, fig. 2, having server process 211, column 5, lines 40-50, for sending print data to a printer, column 7, lines 25-35) and a plurality of client computers, (6a, 6b, 6c, fig. 2) and a client program (rasterizer 212, column 7, lines 5-15, 216 of column 6, lines 59-67, column 22, lines 40-45, and 210, column 6, lines 65-67, column 7, lines 1-5) for instructing a client computer (6a, fig.

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2) comprising the step of: expanding (rasterizer 212, column 7, lines 5-15) print data to bit-map band data; (rasterized small portions of print data, column 6, lines 60-65); dividing (216 of column 6, lines 59-67, column 22, lines 40-45) generated print data for each page into a plurality of bands, (graphic area, column 24 table 3, fig. 27) wherein the generated print data is generated by an application; (column 6, lines 1-15); transferring (210, column 6, lines 65-67, column 7, lines 1-5) a sequentially selected (see the group are arranged in a sequence of 1, 2, 3, . . . , N to be selected by client process 210, column 23, lines 45-67, column 24, line 1-25, and table 3) one of the bands to available (usable, column 7 line 51, fig. 6, fig. 7) ones of print data expanders of the print server computer (column 6, lines 25-30) and client computers, (212 of other computers, column 7, lines 1-10), wherein expanded bit-map band data by the print data expander of each client computer is transferred to the print server computer, (column 7, lines 5-27), the available ones of the print data expanders of the print server computer and the plurality of client computers determined by checking a print data expanding process status (processor load, column 8, lines 25-30) received from each of the print server computer and the plurality of client computers, (fig. 8, column 8, lines 25-32, column 9, lines 14-20, column 6, lines 23-29).

Nagasaka does not teach the print data expanding process status is received without first sending a message to request participation/status to the print server computer and the plurality of client computers.

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Kumano, in the same area of reporting status information from one device to another, teaches a monitoring device receives status (status report, column 3, lines 64-68, column 4, lines 7-19) from another device without sending a message to request status from the another device.

Therefore, it would have been obvious to a person with ordinary skill in the art at the time the invention was made to have modified Nagasaka's method of receiving print data expanding process status from each of the print server computer and the plurality of client computers to include: receiving print data expanding process status from each of the print server computer and the plurality of client computers without first sending a message to request participation/status to the print server computer and the plurality of client computers.

It would have been obvious to a person with ordinary skill in the art at the time the invention was made to have modified Nagasaka's method of receiving print data expanding process status from each of the print server computer and the plurality of client computers by the teaching of Kumano because of the following reasons: (a) it would have reduced communication traffic by eliminating the requesting process, as taught by Kumano, at column 19, lines 5-10, and (b) sending status to print job requesting computer to indicate the processors in the print server computer and the plurality of client computers are ready to expand print data, would speed up print data expanding process because the status requesting message may not be generated at the time the processors are ready to expand print data.

Regarding claims 25-28: Nagasaka teaches wherein when one of the print data expanders finishes expanding a transferred band of print data, (e.g., light load, fig. 7) then the one of the

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print data expanders notifies the transfer controller that the one of the print data is available, (e.g., yes, from 14 to 15, fig. 6) and if the transfer controller has not already transferred each of the plurality of bands, then the transfer controller transfers sequentially a next one of the plurality of bands (e.g., 15, fig. 6) to the one of the print data expanders.

Regarding claim 29: Nagasaka teaches receiving a notification (e.g., yes, from 14 to 15, fig. 6) from one of the print data expander when the one of the print data expanders finishes expanding a transferred band of print data, (e.g., light load, fig. 7) and after receiving the notification, transferring a next sequential band of print data (e.g., 15, fig. 6) to the one of the print data expander of each of the plurality bands have not already been transferred.

Response to Arguments

6. Applicant's arguments filed 1/30/2003 have been fully considered but they are not persuasive.

With respect to applicant argument that Nagasaka does not teach how the divided oblong areas are expanded in the system to obtain high speed printing, has been considered.

In reply: Nagasaka, fig. 6, teaches that oblong areas are expanded/rasterized in parallel (column 7, lines 22-24, column 6, lines 25-29) to achieve high speed printing.

With respect to applicant's argument that Nagasaka teaches group discrimination and the applicant's invention does not require group discrimination.

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Nagasaka's group discrimination is similar to band discrimination in applicant's invention. When print data is being divided into bands/groups, inherently, the band/groups is discriminated from the print data. Otherwise, there is no separation between the print data and the bands. However, Nagasaka, does not group the groups/bands before transferring the groups/bands to computers. Each individual group/band may go to any one of the computers.

With respect to applicant's argument the Nagasaka does not teach the available ones of the print data expanders of the print server computer and the plurality of client computers determined by checking a print data expanding process status received from each of the print server computer and the plurality of client computers, the print data expanding process status is received without first sending a message to request participation/status to the print server computer and the plurality of client computers.

In reply: Nagasaka teaches the available ones of the print data expanders of the print server computer and the plurality of client computers determined by checking a print data expanding process status (processor load, column 8, lines 25-30) received from each of the print server computer and the plurality of client computers, (fig. 8, column 8, lines 25-32, column 9, lines 14-20, column 6, lines 23-29).

Nagasaka does not teach the print data expanding process status is received without first sending a message to request participation/status to the print server computer and the plurality of client computers.

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Kumano, in the same area of reporting status information from one device to another, teaches a monitoring device receives status (status report, column 3, lines 64-68, column 4, lines 7-19) from another device without sending a message to request status from the another device.

Therefore, it would have been obvious to a person with ordinary skill in the art at the time the invention was made to have modified Nagasaka's method of receiving print data expanding process status from each of the print server computer and the plurality of client computers to include: receiving print data expanding process status from each of the print server computer and the plurality of client computers without first sending a message to request participation/status to the print server computer and the plurality of client computers.

It would have been obvious to a person with ordinary skill in the art at the time the invention was made to have modified Nagasaka's method of receiving print data expanding process status from each of the print server computer and the plurality of client computers by the teaching of Kumano because of the following reasons: (a) it would have reduced communication traffic by eliminating the requesting process, as taught by Kumano, at column 19, lines 5-10, and (b) sending status to print job requesting computer to indicate the processors in the print server computer and the plurality of client computers are ready to expand print data, would speed up print data expanding process because the status requesting message may not be generated at the time the processors are ready to expand print data.

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Conclusion

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to King Y. Poon whose telephone number is (703) 305-0892

June 1, 2003

King Y. Poon